

such as those of *Nelumbo*, which is nearly allied to *Sarracenia*. The large and shallow cone which is formed by the limb of the leaf in *Nelumbo* becomes, in *Sarracenia*, deeper and narrower, so as finally to present the form of a long obconical cornet. Simultaneously with this change of form, the portion of the leaf which is called the lid becomes marked off, no doubt in a variable manner in the different species. We know that there are peltate leaves of which the margin of the limb is not entire, but cut into crenulations and lobes, and that sometimes these lobes are unequal, the terminal median one being perhaps more developed than the others. This is one of the causes of the petiole not being inserted in the centre of the peltate limb, but nearer to its base, which is most commonly more or less deeply emarginate-cordate. In the leaf of *Sarracenia* we might expect from the first to see an analogous phenomenon produced, because the pit is surrounded by a border which is thicker above than at the sides and below. This inequality only becomes more strongly marked with age; and it is the upper margin that increases most rapidly, afterwards becoming slightly constricted at its base. This is the origin of the lid and of the more or less distinct lateral projections which often accompany it; these are consequently not a limb, but the unequal lobes of a limb which existed before them.

The signification of that sort of vertical keel which runs along the inner border of the pitcher remains to be explained. This organ exists, usually in a rudimentary state, in a great number of peltate leaves. In these leaves we often observe a nervure or projecting crest, which stretches, on the lower surface of the limb, from the insertion of the petiole to the bottom of the sinus presented by the base of the limb. The crest of the leaves of *Sarracenia* appears to us to be nothing but an exaggeration of this very part; and its vertical direction is merely the consequence of the extreme depth acquired by the immoderately peltate limb of the leaf of *Sarracenia*. —*Comptes Rendus*, Nov. 7, 1870, p. 630.

*Note on the Malar Bone in the Skulls of Manidæ.*

By Dr. J. E. GRAY, F.R.S. &c.

The skulls of *Manis* which have been described and figured, and all the specimens that I have hitherto seen in different museums, have a very imperfect zygomatic arch, caused by the absence of the malar bone. Indeed Mr. Flower, in his admirable 'Introduction to the Osteology of the Mammalia' (p. 206), describing the skull of *Manis*, observes:—"There is no distinction between the orbit and the temporal fossa, which forms a small oval depression near the middle of the side of the skull. There are short zygomatic processes on the maxilla and squamosal, owing to the absence of the malar."

Mr. Swinhoe, early last year, brought me for examination some skulls of *Manis* from Amoy and Formosa, along with the skulls of a new deer and hare. I observed that some of the skulls of *Manis*

had a perfect zygomatic arch, which I had not before seen; but I was suffering too much pain at the time to pay more attention to the subject, observing that most likely the skull belonged to *Manis Dalmanni*, and that it might be distinct from *M. Hodgsoni*, with which I had hitherto united it.

Mr. Swinhoe left his specimens at the British Museum; and I have no doubt that the four from Amoy, which are of different ages, are the skulls of the family of five which he purchased in Amoy in June 1867, described in the 'Proceedings of the Zoological Society' for 1870, p. 650, and that the one from Formosa, which is of a larger size, is the male specimen described in the same place, and that the observation of Mr. Swinhoe, that "the Amoy and Formosan adult skulls both have complete malar arches; but in the skulls of the Amoy young ones these gape apart, the unossified cartilage having been cleaned away," is the true explanation of the absence of the malar, which most probably is present in all the species of the genus.

*On Marine Bryozoa.* By Prof. E. CLAPARÈDE.

In the first Number of vol. xxi. of Siebold und Kolliker's 'Zeitschrift,' Claparède, who, with the exception of Nitzsche, is the only writer who has studied the Bryozoa since the publication of the capital papers of Smitt, gives us most interesting contributions to their history. While on the main points he completely agrees with the views taken by Smitt of the polymorphism of the species, their mode of budding, and general embryonic development, yet in some points not satisfactorily determined by Smitt, such as the relations of the various cells (zoœcia) to one another, the nature of Smitt's "mörka kroppar," dark bodies, and "fett kroppar," he has new observations differing somewhat from those of Smitt. The most interesting facts are those concerning a sort of retrograde development, a resorption of the digestive cavity in the older cells, the gradual disappearance of the lophophore, resulting in cells usually considered as dead, but in reality having latent life, and where alone the fatty bodies of Smitt, which play such an important part in the embryology of Bryozoa, are developed. These cells apparently pass through stages identical with those produced by budding at the youngest extremity of the colony, with the difference that in one case the cell is immature, while in the other it is fully developed. The resorption is frequently accompanied by peculiar changes in these cells, and is confined to the older portions of the Bryozoan colony in which the lateral connexion between the cells for exchange of fluids between the cells provided with digestive cavities and those cells containing latent life is very strikingly shown, thus forming a complete circulation between the most distant parts of the colony. He also confirms the nature of the colonial nervous system, first traced by Fritz Müller, and shows its existence among the Chilosotomata, where it had only been traced by Smitt before. Claparède closes this interesting paper by giving us the complete development of *Bugula*, with larger, more accurate, and at the same time more